

Assignment #7 for Computer Networks (CNT 4004) for Fall 2018

Due November 27, 2018 at the start of class

This assignment primarily covers material from chapter sections 5.6 and 5.7 (network management) and chapter sections 4.4 and 5.5 (Software Defined Networking) of the textbook and from class lecture. Each problem is worth 20 points.

Problem #1

Answer the following questions coming from your chapter sections 5.6 and 5.7 reading.

- a) What does ICMP stand for?
- b) What well know program uses ICMP (and has it implemented directly in the OS in many case)?
- c) Give the definition for “what is network management?” as given in the textbook (it is one very long sentence).
- d) What does MIB stand for?
- e) Give an example of a MIB object
- f) What does SNMP stand for?
- g) Does SNMP use request-response?
- h) List the seven SNMPv2 types of messages
- i) What is the preferred transport mapping for SNMP
- j) What does SNMPv3 add to SNMPv2? The answer is one word.

Problem #2

Answer the following questions coming from your Chapter 4.4 reading.

- a) Describe “generalized forwarding” in one sentence
- b) What is OpenFlow?
- c) What is the match-plus-action table know as?
- d) What are the network layer packet matching fields for Openflow 1.0?
- e) Can OpenFlow be used to implement firewalls?

Problem #3

Answer the following questions coming from your Chapter 5.5 reading.

- a) What are the four key characteristics of an SDN architecture?
- b) Fill in the blank (two words), “The network is programmable through the network-control applications running in the _____.”
- c) The hope is that SDN will lean to rich innovation, why is this?
- d) What are the names of the two APIs for an SDN controller?
- e) Where does the OpenFlow protocol operate? Over what does it operate?

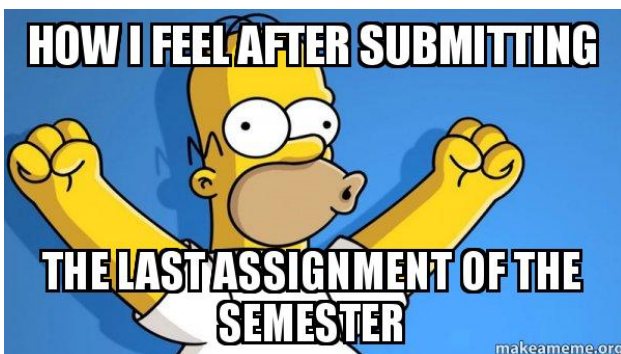
Problem #4

Do Review Question R20 (page 428) in the text book.

Problem #5

It is people that create technology. It really is important to know the “key players” in any field. Imagine that you are a golf player and you don’t know who Tiger Woods is. I would wonder if you really know anything about golf. So, for each person listed below give a short phrase (no more than one sentence) for their major contribution to networking.

- Leonard Kleinrock
- Marc Andreessen
- Van Jacobson
- Vinton G. Cerf
- Jennifer Rexford
- Simon S. Lam
- Deborah Estrin
- Steven M. Bellovin
- Henning Schulzrinne
- Robert Metcalfe



Yay! You have finished the last assignment of the semester for CNT 4004. I hope that you have learned a lot.